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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/072,575

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Pang-Chia Lu

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05/07/2003

EXXONMOBIL CHEMICAL COMPANY  
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EXAMINER

KRUER, KEVIN R

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/072,575

Applicant(s)

LU, PANG-CHIA

Examin r

Kevin R Kruer

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102(e)***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 6-8, 11, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Morris et al (US 6,500,556). Morris teaches an adhesive useful as a tie between metal foils and olefinic films (abstract). The substrate may comprise LLDPE, LDPE, or HDPE (col 2, lines 31+). The adhesive comprises a blend of two ethylene (meth)acrylic acid copolymers. The first copolymer is a high acid copolymer comprising a copolymer of ethylene and (meth)acrylic acid. The copolymer may further comprise an alkyl acrylate (col 3, lines 2+). The high acid copolymer preferably has a weight percentage acid of 7-25wt% (col 3, lines 47+). The low acid copolymer may also comprise an alkyl acrylate softening comonomer (col 3, lines 2+) and comprises 1-22wt% acid (col 3, lines 63+).

### ***Claim Rejections - 35 USC § 102(b)***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 8, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hori et al (US 4,092,452). Hori teaches a plastic laminated metallic foil (abstract) wherein terpolymers of ethylene, unsaturated carboxylic acids, and carboxylic esters are utilized to adhere the metallic foil to a substrate (abstract). The metallic layer is applied to a substrate selected from the group selected from polyethylene, ethylene vinyl acetate, and ethylene copolymers (abstract). The adhesive exhibits excellent adhesion to the substrate and the foil (col 1, lines 39+). The terpolymer preferably comprises no more than 20wt% of the ester, and preferably comprises 70-90wt% ethylene, and 30-10wt% of carboxylic acid and carboxylic acid ester (col 2, lines 22-63). The surfaces of the composite plastic film can be subjected to pretreatment prior to the lamination of the metal foil (col 4, lines 40+).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howden et al (US 4,357,383) in view of Birnkraut et al (US 4,032,692). Howden teaches a multiple-layer metallized film comprising a substrate layer of a polymer or copolymer of an alpha olefin, wherein said substrate has on at least one surface thereof

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an adherent layer comprising a random copolymer (abstract). Suitable substrates include ethylene and propylene (co)polymers (col 1, lines 39+). If desired, both of the substrate surfaces may be provided with an ethylene copolymer adherent layer (col 4, lines 39+). The ethylene copolymer adherent layer may comprise an ethylene-butene, ethylene-propylene or ethylene-hexene (col 1, lines 46+). The laminate is made by melt-extrusion or coextrusion (col 2, lines 42+). The film comprising the substrate and adherent layer is stretched to orient the substrate prior to deposition of a metallic layer. The substrate may further be chemically or physically surface modified prior to the application of the metal layer (col 3, lines 32+). Orientation may be affected uniaxially or biaxially (col 2, lines 59+). The metal layer is applied by lamination or deposition (col 3, lines 54+).

Howden does not teach that the adherent layer between the metallic layer and the substrate may comprise the claimed terpolymer. However, Brinkraut teaches that it is known in the art to bond materials together utilizing copolymers of ethylene, ethylenically unsaturated carboxylic acid, and esters thereof (col 1, lines 17+). Thus, it would have been obvious to one of ordinary skill in the art to utilize the terpolymer taught in Brinkraut as the adherent layer of the laminate taught in Howden because said terpolymer is known in the art to be functionally equivalent to the adherent layer taught in Howden.

4. Claims 1-3 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howden et al (US 4,357,383) in view of Hori et al (US 4,092,452). Howden teaches a multiple-layer metallized film comprising a substrate layer of a polymer or

copolymer of an alpha olefin, wherein said substrate has on at least one surface thereof an adherent layer comprising a random copolymer (abstract). Suitable substrates include ethylene and propylene (co)polymers (col 1, lines 39+). If desired, both of the substrate surfaces may be provided with an ethylene copolymer adherent layer (col 4, lines 39+). The ethylene copolymer adherent layer may comprise an ethylene-butene, ethylene-propylene or ethylene-hexene (col 1, lines 46+). The laminate is made by melt-extrusion or coextrusion (col 2, lines 42+). The film comprising the substrate and adherent layer is stretched to orient the substrate prior to deposition of a metallic layer. The substrate may further be chemically or physically surface modified prior to the application of the metal layer (col 3, lines 32+). Orientation may be affected uniaxially or biaxially (col 2, lines 59+). The metal layer is applied by lamination or deposition (col 3, lines 54+).

Howden does not teach that the adherent layer between the metallic layer and the substrate may comprise the claimed terpolymer. However, Hori teaches a plastic laminated metallic foil (abstract) wherein terpolymers of ethylene, unsaturated carboxylic acids, and carboxylic esters are utilized to adhere the metallic foil to a substrate (abstract). The adhesive exhibits excellent adhesion to the substrate and the foil (col 1, lines 39+). The terpolymer preferably comprises no more than 20wt% of the ester, and preferably comprises 70-90wt% ethylene, and 30-10wt% of carboxylic acid and carboxylic acid ester (col 2, lines 22-63). It would have been obvious to utilize the terpolymer taught in Hori as the adherent layer taught in Howden because said terpolymer is taught to have excellent adhesion to both metallic and olefinic substrates.

5. Claims 1-3 and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Howden et al (US 4,357,383) in view of Morris et al (US 6,500,556). Howden teaches a multiple-layer metallized film comprising a substrate layer of a polymer or copolymer of an alpha olefin, wherein said substrate has on at least one surface thereof an adherent layer comprising a random copolymer (abstract). Suitable substrates include ethylene and propylene (co)polymers (col 1, lines 39+). If desired, both of the substrate surfaces may be provided with an ethylene copolymer adherent layer (col 4, lines 39+). The ethylene copolymer adherent layer may comprise an ethylene-butene, ethylene-propylene or ethylene-hexene (col 1, lines 46+). The laminate is made by melt-extrusion or coextrusion (col 2, lines 42+). The film comprising the substrate and adherent layer is stretched to orient the substrate prior to deposition of a metallic layer. The substrate may further be chemically or physically surface modified prior to the application of the metal layer (col 3, lines 32+). Orientation may be affected uniaxially or biaxially (col 2, lines 59+). The metal layer is applied by lamination or deposition (col 3, lines 54+).

Howden does not teach that the adherent layer between the metallic layer and the substrate may comprise the claimed terpolymer. However, Morris teaches an adhesive useful as a tie between metal foils and olefinic films (abstract). The adhesive comprises a blend of two ethylene (meth)acrylic acid copolymers. The first copolymer is a high acid copolymer comprising a copolymer of ethylene and (meth)acrylic acid. The copolymer may further comprise an alkyl acrylate (col 3, lines 2+). The high acid copolymer preferably has a weight percentage acid of 7-25wt% (col 3, lines 47+). The

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low acid copolymer may also comprise an alkyl acrylate softening comonomer (col 3, lines 2+) and comprises 1-22wt% acid (col 3, lines 63+). It would have been obvious to one of ordinary skill in the art to utilize the blend taught in Morris as the adherent layer of the laminate taught in Howden because said blend is a useful tie layer between metallic foils and olefinic substrates.

6. Claims 1-3, 5, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (US 4,604,322) in view of Birnkraut et al (US 4,032,692). Reid teaches a metallized biaxially oriented polypropylene films which exhibits good adhesion to metal coatings (abstract). The polypropylene core is preferably an isotactic propylene (col 1, lines 57+). At least one surface of the polypropylene core layer carries a propylene-ethylene copolymer that is corona treated (col 2, lines 13+). Said layer has a metal foil applied thereto. The other surface of the core layer may be coated with a heat-sealable layer such as low density polyethylene, ethylene-butene, ethylene-octene, or ethylene-propylene-butene (col 2, lines 31+). The film may be made by coextrusion(col 2, lines 42+).

Reid does not teach that the layer between said substrate and the metallized layer should comprise the claimed terpolymer. However, Brinkraut teaches that it is known in the art to bond materials together utilizing copolymers of ethylene, ethylenically unsaturated carboxylic acid, and esters thereof (col 1, lines 17+). Thus, it would have been obvious to one of ordinary skill in the art to utilize the terpolymer taught in Birnkraut as the adherent layer of the laminate taught in Reid because said



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terpolymer is known in the art to be functionally equivalent to the adherent layer taught in Reid.

7. Claims 1-3, 5, and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (US 4,604,322) in view of Hori et al (US 4,092,452). Reid teaches a metallized biaxially oriented polypropylene films which exhibits good adhesion to metal coatings (abstract). The polypropylene core is preferably an isotactic propylene (col 1, lines 57+). At least one surface of the polypropylene core layer carries a propylene-ethylene copolymer that is corona treated (col 2, lines 13+). Said layer has a metal foil applied thereto. The other surface of the core layer may be coated with a heat-sealable layer such as low density polyethylene, ethylene-butene, ethylene-octene, or ethylene-propylene-butene (col 2, lines 31+). The film may be made by coextrusion(col 2, lines 42+).

Reid does not teach that the adherent layer between the metallic layer and the substrate may comprise the claimed terpolymer. However, Hori teaches a plastic laminated metallic foil (abstract) wherein terpolymers of ethylene, unsaturated carboxylic acids, and carboxylic esters are utilized to adhere the metallic foil to a substrate (abstract). The adhesive exhibits excellent adhesion to the substrate and the foil (col 1, lines 39+). The terpolymer preferably comprises no more than 20wt% of the ester, and preferably comprises 70-90wt% ethylene, and 30-10wt% of carboxylic acid and carboxylic acid ester (col 2, lines 22-63). It would have been obvious to utilize the terpolymer taught in Hori as the adherent layer taught in Reid because said terpolymer is taught to have excellent adhesion to both metallic and olefinic substrates.

8. Claims 1-3, 5, and 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (US 4,604,322) in view of Morris et al (US 6,500,556). Reid teaches a metallized biaxially oriented polypropylene films which exhibits good adhesion to metal coatings (abstract). The polypropylene core is preferably an isotactic propylene (col 1, lines 57+). At least one surface of the polypropylene core layer carries a propylene-ethylene copolymer that is corona treated (col 2, lines 13+). Said layer has a metal foil applied thereto. The other surface of the core layer may be coated with a heat-sealable layer such as low density polyethylene, ethylene-butene, ethylene-octene, or ethylene-propylene-butene (col 2, lines 31+). The film may be made by coextrusion(col 2, lines 42+).

Reid does not teach that the adherent layer between the metallic layer and the substrate may comprise the claimed terpolymer. However, Morris teaches an adhesive useful as a tie between metal foils and olefinic films (abstract). The adhesive comprises a blend of two ethylene (meth)acrylic acid copolymers. The first copolymer is a high acid copolymer comprising a copolymer of ethylene and (meth)acrylic acid. The copolymer may further comprise an alkyl acrylate (col 3, lines 2+). The high acid copolymer preferably has a weight percentage acid of 7-25wt% (col 3, lines 47+). The low acid copolymer may also comprise an alkyl acrylate softening comonomer (col 3, lines 2+) and comprises 1-22wt% acid (col 3, lines 63+). It would have been obvious to one of ordinary skill in the art to utilize the blend taught in Morris as the adherent layer of the laminate taught in Reid because said blend is a useful tie layer between metallic foils and olefinic substrates.

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9. Claims 1-4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 4,367,112) in view of Hori et al (US 4092,452). Park teaches a polypropylene core layer having a heat sealable layer applied thereto (abstract). The heat sealable layer comprises ethylene methacrylate (col 2, lines 34+) and can be applied to the core layer after the core layer has already been oriented in the machine direction (col 3, lines 5+). The laminate is then oriented in the transverse direction. Alternatively, the layers can be coextruded and biaxially oriented.

Park does not teach that the heat sealable layer may comprise the claimed terpolymer. However, Hori teaches that ethylene unsaturated carboxylic acid ester copolymers and terpolymers comprising ethylene-unsaturated carboxylic acid ester-carboxylic acid are functionally equivalent heat sealable layers in the art (abstract). The terpolymer preferably comprises no more than 20wt% of the ester, and preferably comprises 70-90wt% ethylene, and 30-10wt% of carboxylic acid and carboxylic acid ester (col 2, lines 22-63). Thus, it would have been obvious to one of ordinary skill in the art to utilize the terpolymer taught in Hori as the heat sealable layer of Park because said terpolymer is known in the art to be a functionally equivalent heat sealable layer to the EMA polymer taught in Park.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 703-305-0025. The examiner can normally be reached on Monday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*KRK-*

krk  
May 4, 2003

*Paul Thibodeau*

Paul Thibodeau  
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Technology Center 1700